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| EXAMINER | |
|---|---|
| BUTLER, PATRICK NEAL | |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/773,465 | MORIWAKI ET AL. | |
| | Examiner | Art Unit | |
| | Patrick Butler | 1791 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *08 July 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,2,7,18 and 19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,7,18 and 19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 7, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishibori et al. (US Patent No. 5,323,971) in view of Gordon et al. (UK Patent Application GB 2 121 535 A).

Regarding claim 1, Nishibori et al. teach a resin material remolding (abstract) method comprising: pulverizing a coated resin molded product (col. 7 lines 30-52), peeling and separating a coating film from the pulverized pieces by simultaneous compression and fine vibration (rubbing) at a predetermined throughput rate (peeling is performed within a predetermined time) (see col. 7 lines 53-59 and col. 25, lines 48-51), and regulating to a desired partical size (such that the pulverized pieces maintain a particular diameter of at least a predetermined size) (see col. 5, lines 40-60), and performing molding by using the pulverized pieces having no coating film adhered after separating (col. 23 lines 14 and 15).

Nishibori et al. also recognize the strong adhesion strength of the coating film on the resin article, the difficulty of peeling off the film, and incomplete removal of the film (col. 2 lines 57-64 & col. 23 lines 15-21).

Nishibori does not appear to explicitly teach that residual coating film is within the claimed range (e.g., exceeding 50 $mm^2$).

However, in this regard, Nishibori teaches regulating to a desired partical size, which effects the amount of residual resin film (see col. 5, lines 40-60 and col. 23, lines 33-53). As such, Nishibori recognizes that residual coating film is a result-effective variable. Since residual coating film is a result-effective variable, one of ordinary skill in the art would have obviously been motivated to determine the optimum residual coating film applied in the process of Nishibori through routine experimentation based upon having larger partical size and its improvements such as higher throughput of peeling through the peeling machinery.

Nishibori does not teach a determination step of sensing and determining the presence/absence of adhesion of the coating film for each individual pulverized piece after the peeling; separating a pulverized piece having the coating film adhered from pulverized pieces having no coating film adhered, on the basis of the determination result.

Gordon teaches a sorting system wherein desired objects are detected amongst a plurality of objects and separated therefrom (a separation step of separating a pulverized piece having the coating film adhered from pulverized pieces having no coating film adhered) (see page 1, lines 5-11). The sorting system utilizes a detector suitable for detecting the presence of an object with desired characteristics (sensing and determining the presence/absence of adhesion of the coating film for each individual pulverized piece after peeling; wherein the sensing and determining senses

and determines the presence/absence of adhesion of the coating film by sensing the coating film itself or a specific material present in the coating film by using a sensor) (see page 1, lines 5-11).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Gordon's detection and sorting system in the method of remolding taught by Nishibori since Gordon's system provides high sorting throughputs of objects of small size (see page 1, lines 17-22) and it obvious to interchange components recognized by the art as being equivalent for the same purpose (See MPEP 2144.06). Moreover, Nishibori seeks to use resin without film attached, and film removal is incomplete (col. 2 lines 57-64 & col. 23 lines 15-21).

Nishibori et al. teach that the coating film is usually resin material of different colors (col. 2 lines 42-46). Thus, one having ordinary skill in the art would be led to use Gordon's sorting step based at least on color to separate out pulverized powder with coating film from those free of coating.

With respect to Claim 2, Nishibori et al.'s final removal leaves 0.46 to 0.49% by weight film. This is a removal ratio of 99.51-99.54%, which reads of the claimed range of 98.90-99.58%.

Nishibori does not appear to explicitly teach that the predetermined time of peeling is within the claimed range (e.g., 15 to 50 minutes).

However, in this regard, Nishibori teaches desired throughput of 80 to 100 kg/hr (see col. 25, lines 48-51), that amount of film removed is 99.5% (see col. 25, lines 45-48), and varying the speed of the motors to obtain film removal for particular processed

material (see col. 12, lines 39-45 and col. 13, lines 10-13). As such, Nishibori recognizes that the duration of peeling is a result-effective variable. Since the duration of peeling is a result-effective variable, one of ordinary skill in the art would have obviously been motivated to determine the optimum duration of peeling applied in the process of Nishibori in view of Gordon through routine experimentation based upon the properties of the material being processed, throughput, and desired product attributes.

Nishibori et al. do not teach that the determination step senses and determines the presence/absence of adhesion of the coating film by sensing the coating film itself or a specific material present in the coating film by using a sensor for sensing the coating film on the basis of a difference in lightness, that the sensing is executed for the pulverized pieces in a plurality of directions, and that the determination step executes the sensing in a specific position midway along a moving path in which the pulverized pieces are moved in a specific direction, and the separation step executes the separation, when a pulverized piece having the coating film adhered is sensed in the determination step, by blowing a gas against the pulverized piece during freefall to change a moving direction of the pulverized piece having the coating film adhered to a direction different from a moving direction of a pulverized piece having no coating film adhered.

However, Gordon teaches detecting a characteristic of an object (presence of adhesion of the coating film by sensing the coating film itself or a specific material present in the coating film by using a sensor) (page 2, lines 14-20) from a variety of directions (see variety of angles in Fig. 1). Gordon teaches that the sensing is done in

specific positions between the beginning and end of the path (see Figure 1) and the separation is executed by a nozzle array (blowing a gas) in free space (free fall) (see page 3, lines 3-7 and 30-40).

It would have been obvious to one having ordinary skill in the art at the time of invention to modify Nishibori et al's method for resin material remolding to include detecting a characteristic of the material in order to properly sort the object (see Gordon, page 2, lines 56-58) since Gordon's system provides high sorting throughputs of objects of small size (see page 1, lines 17-22), and it is obvious to interchange components recognized by the art as being equivalent for the same purpose (See MPEP 2144.06). The frequency of irradiation and response is in the optical region (color) (see Gordon, page 2, lines 36-44).

With respect to Claim 7, Gordon teaches that the sensing is done in specific positions between the beginning and end of the path (see Figure 1) and the separation is executed by a nozzle array in free space (the movement of the pulverized pieces is falling) (see page 3, lines 3-7 and 30-40).

Regarding claim 18, Nishibori et al. teach that the coated resin molded product is pulverized at random by using a cutting tool having a rotary/stirring blade (col. 12 lines 39-53). Nishibori et al. also teach classifying the pulverized pieces by particle-diameter (fig 13, **255**) but do not teach the determination step. However, Gordon teaches this determination step (page 2, lines 14-20). Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to modify Nishibori et al's method

for resin material remolding to include a determination step after step **256** in order to separate out unwanted components.

Regarding claim 19, Nishibori et al. teach that the coated resin molded product is a used automobile part (col. 2 lines 29-41).

***Response to Arguments***

Applicant's arguments filed 08 July 2008 have been fully considered but they are not persuasive.

Applicant argues with respect to the 35 USC 103 rejections. Applicant's arguments appear to be on the grounds that:

1) Nishibori completely removes coating film. Therefore, Nishibori fails to teach the newly claimed limitation of maintaining a residual coating film area of greater than 50 $mm^2$.

2) At such size, the material may be detected, but at lower sizes, the material would necessarily not be detectable.

3) Since Nishibori is concerned with total film removal, it would not have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the detection of Gordan to sort for removal of resin with film attached.

4) Neither Nishibori nor Gordan teach the newly added limitation to Claim 2 of the peeling performance range nor removal ratio.

Applicant's arguments are addressed as follows:

1) Applicant's arguments with respect to the newly claimed limitation of maintaining a residual coating film area of greater than 50 $mm^2$ have been considered but are moot in view of the new ground(s) of rejection.

1-3) Moreover, as recited above:

> Nishibori et al. also recognize the strong adhesion strength of the coating film on the resin article, the difficulty of peeling off the film, and incomplete removal of the film (col. 2 lines 57-64 & col. 23 lines 15-21).
>
> Nishibori does not appear to explicitly teach that residual coating film is within the claimed range (e.g., exceeding 50 $mm^2$).
>
> However, in this regard, Nishibori teaches regulating to a desired partical size, which effects the amount of residual resin film (see col. 5, lines 40-60 and col. 23, lines 33-53). As such, Nishibori recognizes that residual coating film is a result-effective variable. Since residual coating film is a result-effective variable, one of ordinary skill in the art would have obviously been motivated to determine the optimum residual coating film applied in the process of Nishibori through routine experimentation based upon having larger partical size and its improvements such as higher throughput of peeling through the peeling machinery.

2) Although Applicant's Arguments with respect to the technical limitations of film detection have been considered, the arguments of counsel cannot take the place of evidence in the record.

3) The several reasons for removing resin with film attach are as cited above:

- Gordon's system provides high sorting throughputs of objects of small size (see page 1, lines 17-22), and

- It obvious to interchange components recognized by the art as being equivalent for the same purpose (See MPEP 2144.06).

- Moreover, Nishibori seeks to use resin without film attached, and film removal is incomplete (col. 2 lines 57-64 & col. 23 lines 15-21).

- Nishibori et al. teach that the coating film is usually resin material of different colors (col. 2 lines 42-46). Thus, one having ordinary skill in the art would be led to use Gordon's sorting step based at least on color to separate out pulverized powder with coating film from those free of coating.

4) Nishibori in view of Gordan teach the claimed peeling performance duration and coating film removal ratio as recited above and as applied to Claims 24 and 25 in the Office Action mailed 08 April 2008. It is noted that the rejection of the peeling performance duration and film removal ratio were conceded without argument in Applicant's response filed 08 July 2008.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Butler whose telephone number is (571) 272-8517. The examiner can normally be reached on Mon.-Thu. 7:30 a.m.-5 p.m. and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. B./
Examiner, Art Unit 1791

/Monica A Huson/
Primary Examiner, Art Unit 1791